No. 626,104. Patented May 30, 1899.

E. S. SHIMER.

TYPE WRITING MACHINE.

(Application filed May 17, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

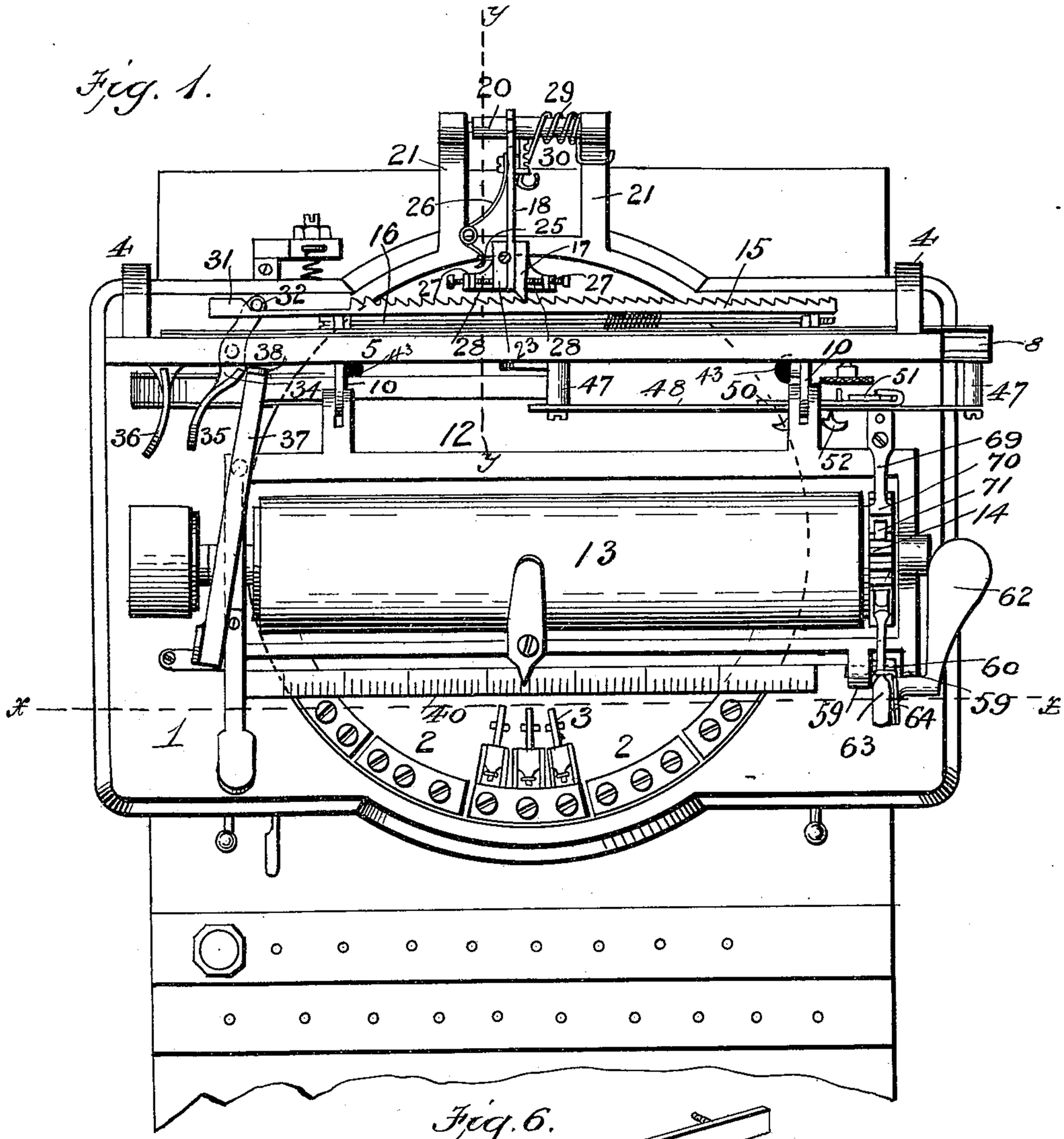

Fig. 6.

Fig. 4

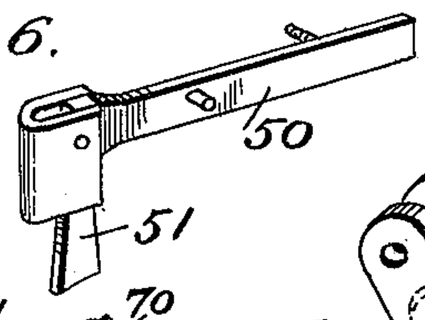

Fig. 5.

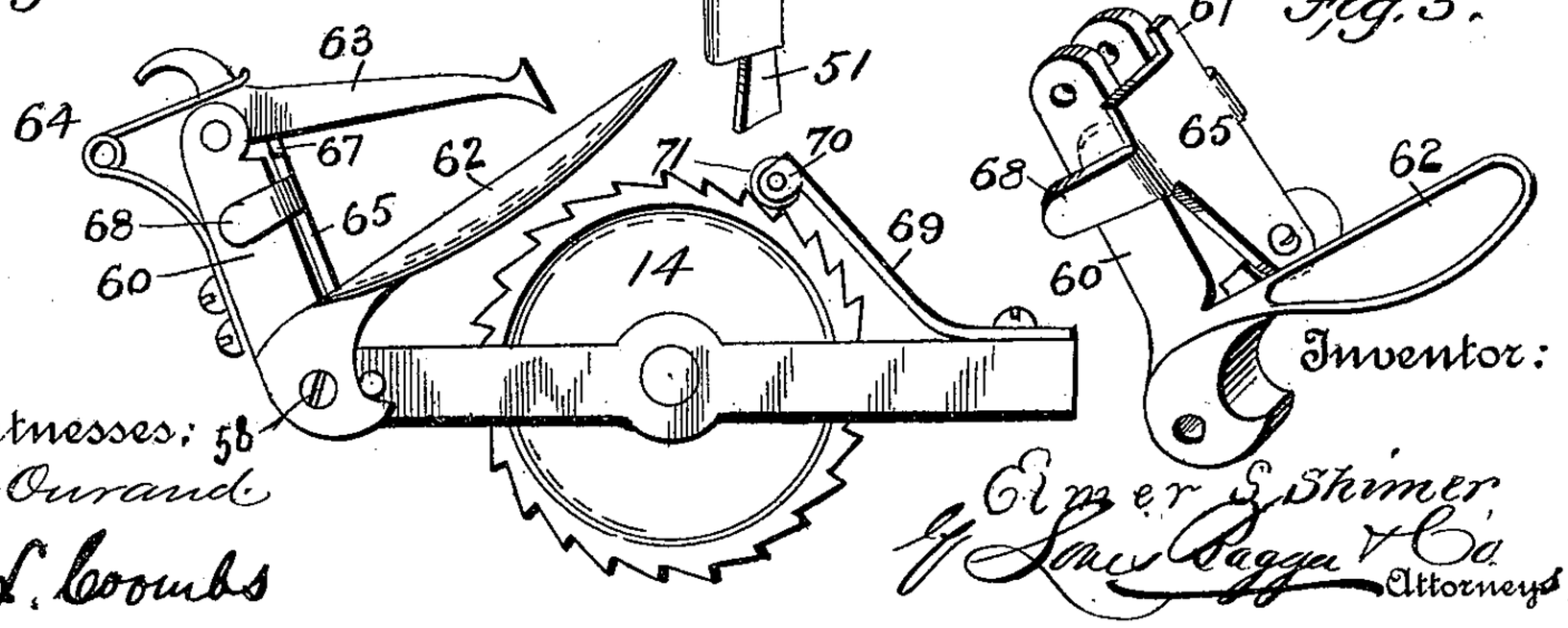

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Fig. 2.

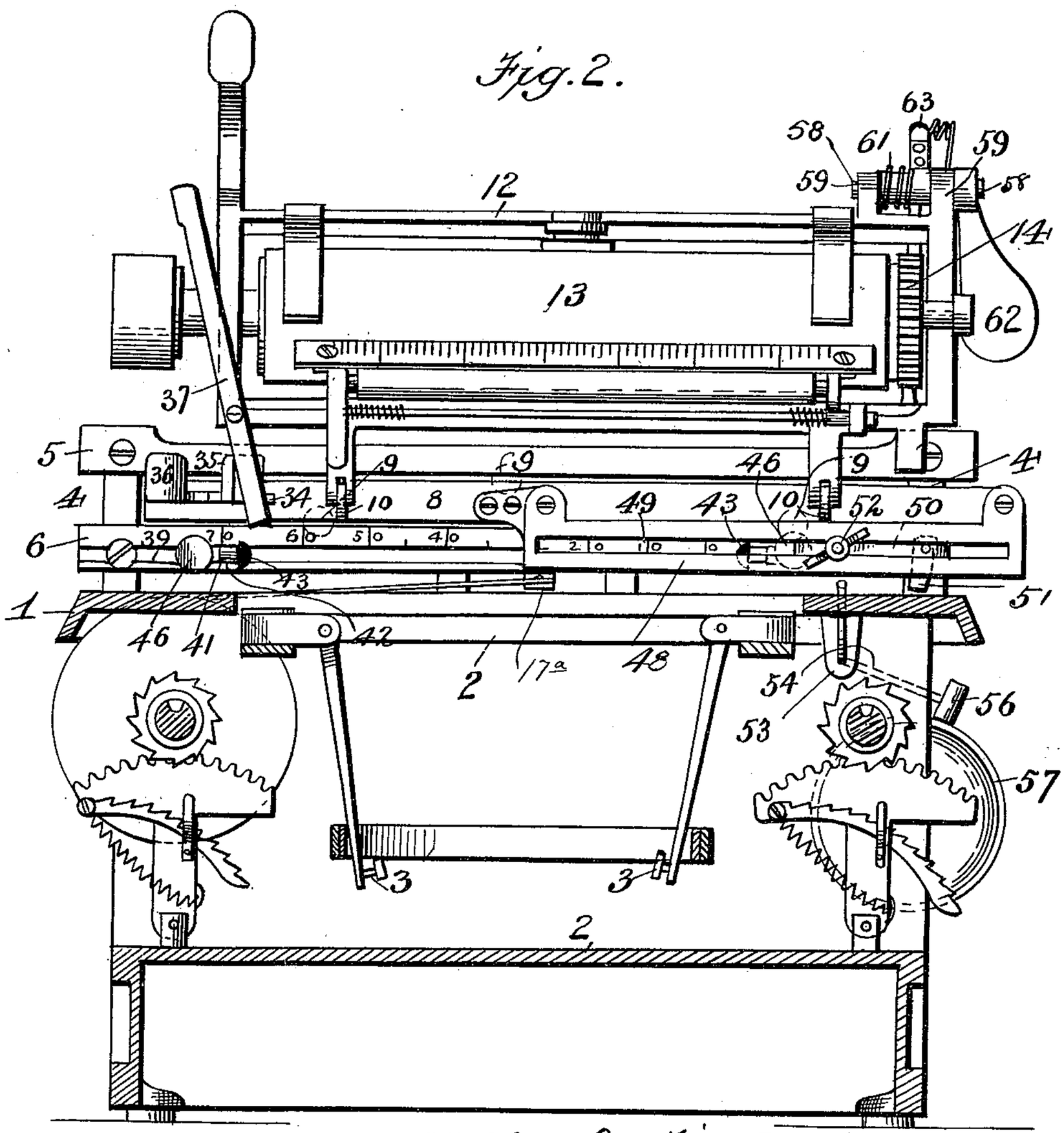


Fig. 7.

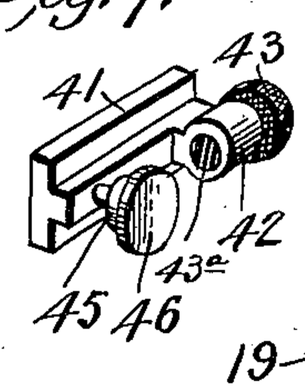


Fig. 3.

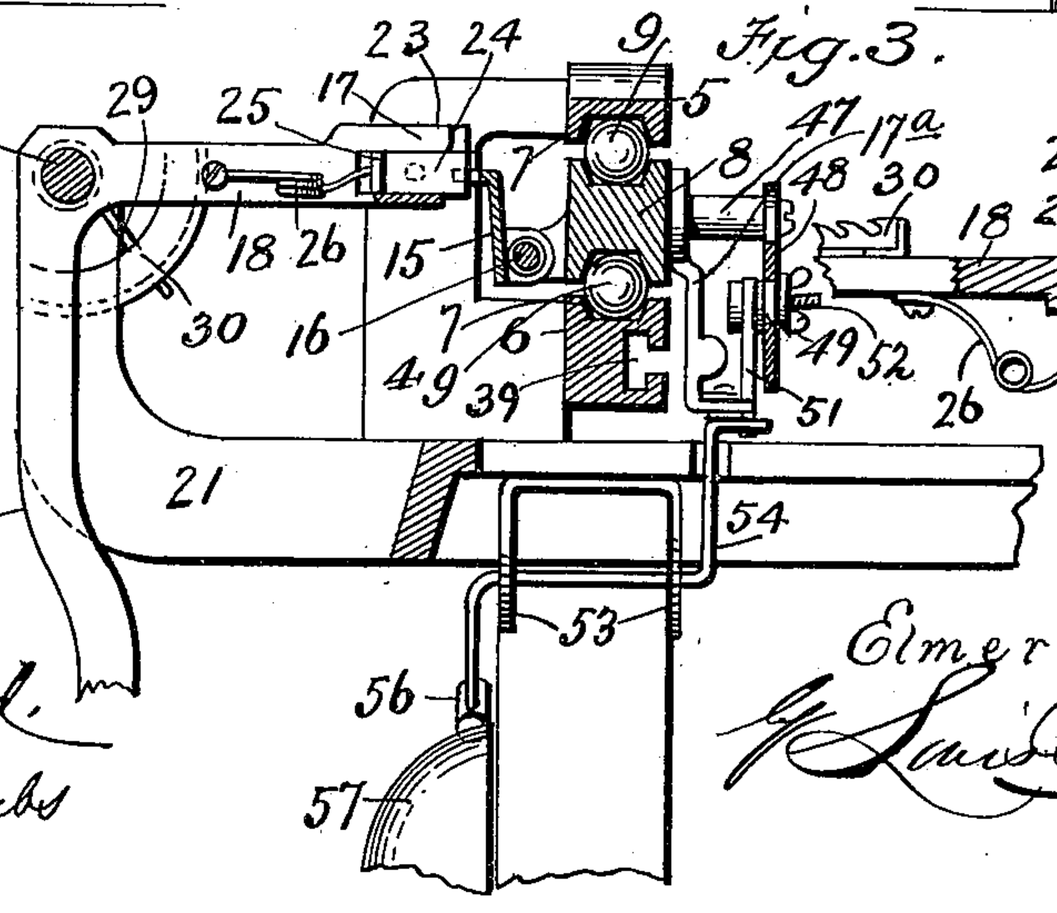
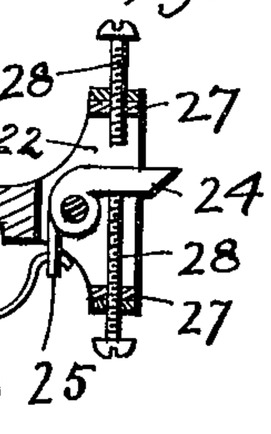


Fig. 8.



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UNITED STATES PATENT OFFICE.

ELMER S. SHIMER, OF MILTON, PENNSYLVANIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 626,104, dated May 30, 1899.

Application filed May 17, 1898. Serial No. 680,983. (No model.)

To all whom it may concern:

Be it known that I, ELMER S. SHIMER, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type-writing machines; and its object is to provide an improved construction of the same which shall possess superior advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a plan view of so much of a type-writing machine as is necessary to illustrate my invention. Fig. 2 is a longitudinal section on the line *x x*, Fig. 1, the paper-cylinder being raised, so as to show the paper-carriage. Fig. 3 is a detail section on the line *y y*, Fig. 1. Fig. 4 is a detail side elevation of line-spacer. Fig. 5 is a perspective view of a portion of the line-spacing mechanism. Fig. 6 is a perspective view of the slide which operates the bell-hammer. Fig. 7 is a detail view of the bumpers for the paper-carriage. Fig. 8 is a horizontal section of the oscillating arm carrying the paper-carriage-feeding dogs.

In the said drawings the reference-numeral 1 designates the frame of the machine, 2 the type-basket, and 3 the type-bars, which may be of any ordinary or suitable construction.

The numeral 4 designates a bracket secured to each end of the machine, to which are secured horizontal stationary guide-rails 5 and 6, formed in their adjacent sides with grooves 7.

The numeral 8 designates the reciprocating or traverse rail of the paper-carriage, formed with grooves in the upper and lower sides, and located in said grooves and in the grooves of the rails 5 and 6 are balls 9, as shown in Letters Patent granted to Samuel J. Shimer and myself June 30, 1896, No. 563,080. Pivoted to lugs 10 of the traverse-rail is the paper-carriage 12, provided with the paper-cylinder 13, having a ratchet-wheel 14, and with means for turning said cylinder for line-spacing and provided with the usual small paper-roll and other accessorial parts, which form no part of my present invention and which may be of any ordinary or suitable construction. The numeral 15 designates the letter-space rack-bar, pivoted to a bar 16, secured to said traverse-rail.

The numeral 18 designates the forwardly-extending arm of a lever 19, secured to a rock-shaft 20, journaled in a bracket 21 of the frame 1. This arm at its inner end is formed with a lug 23, to one side of which is fixed a dog 17, adapted to engage the teeth of the rack-bar 15. Below this lug and formed with said arm is a horizontal forwardly-extending plate 22, between which and the lug 23 is located a pawl 24, pivoted to said lug and plate and provided with a projection 25, with which is connected one end of a spring 26, the other end of which is connected with the arm 18. It will thus be seen that the said pawl is located below said dog, so as to be out of horizontal alinement or in a different horizontal plane therewith. The plate 22 at each end is formed with an ear 27, through which passes a set-screw 28 for limiting the movement of the pawl. In normal position the horizontal arm 18 of the lever 19 is elevated, so that the spring-pawl engages with the spacer rack-bar and holds the latter against forward movement. Upon the depression of a key said horizontal arm is depressed, throwing the pawl out of engagement with the spacer-bar and bringing the fixed dog into engagement with the tooth from which the pawl has been disengaged. The pawl will now be thrown or turned backward on its pivot by the spring 26, so as to come in vertical alinement with the next tooth of the spacer-bar. The parts will be held in this position until the pressure on the key is relieved, when the arm 18 will be elevated, disengaging the dog from the spacer-bar and bringing the pawl into engagement with the tooth above, when the spacer-bar will move forward one tooth, the pawl turning forward on its pivot to permit of such movement. The spring 29 returns the lever 18 to normal position after having been operated by the depression of a key.

Secured to the bracket 21 is one end of a spring 29, coiled around the rock-shaft, the other end of which spring is adapted to engage with a ratchet-segment 30, by which the tension of the spring may be regulated. The

construction of the parts is such that as the lever 19 is actuated by the depression of a key, as usual, the pawl 24 will be thrown out of engagement with the rack-bar, so as to clear the tooth and will be turned to one side the distance of another tooth, and the dog 17 will now engage with the tooth from which the pawl has just been disengaged. Upon the pressure of the key being relieved the lever will return to normal position, the dog rising out of engagement with the rack-bar and the pawl again coming into engagement with the latter, so that the rack-bar will be fed forward the distance of one tooth.

The numeral 17ª designates an arm secured to the traverse-rail, with which are connected the strap and spring which cause the travel of the paper-carriage. This arm also serves as a stop for the margin-spacers to limit the movement of said carriage by abutting against the buffers carried by the traverse-rail.

For the purpose of throwing the rack-bar out of engagement with the pawl, so as to allow the paper-carriage to be moved forward without depressing a key, I provide the following means: At the left end of the traverse-rail is pivoted a lever 34, provided with a pin 32, which engages with the spacer-bar when said lever is operated to disengage the latter from the pawl and allow the paper-carriage to be moved back. This lever passes through a slot in the traverse-rail, which latter is also provided with a stationary finger-hold 36. The said lever is also formed with a finger-hold 35. When said lever is operated, the pin 32 will strike the spacer or rack bar, throwing it upward and forward and disengaging it from the pawl. For the purpose of facilitating the disengagement of the rack-bar and its pawl from the front of the machine I provide the lever 37, pivoted to the paper-carriage and formed at the rear end with a lug 38, which when said lever 37 is actuated will strike the lever 34 and throw the rack-bar forward, as before described.

Formed in the front side of the rail 6 is a T-shaped groove 39, extending from end to end thereof, and said rail above said groove is graduated or formed with a scale corresponding with the front scale 40 of the machine. Located in said groove are two T-shaped slides 41, each formed with an inwardly-extending lug 42, provided with elastic bumpers or buffers 43. The said buffers are formed with reduced shanks 43ª, which fit in holes in the lugs 42 at the inner ends of the slides. Engaging with said slides are set-screws provided with a collar 45 and milled head 46 for holding said slides at any point to which they may be adjusted. The object of said slides and buffers or bumpers is to limit the movement of the paper-carriage, so as to form the margins at the ends of the lines and to deaden the noise.

Secured to studs 47, attached to the traverse-bar 8, is a plate 48, formed with a longitudinal slot 49, and abutting against the inner side of said plate is a sliding plate 50, provided at its outer end with a depending pivoted lug 51, which forms a bell-trip. The end of said plate 50 is bent over said lug or trip, so that it will hold the latter in a vertical position on the forward movement of the paper-carriage, but will allow it to yield or turn on its pivot on the backward movement. Engaging with said sliding plate is a set-screw 52 for holding it in its adjusted position. Pivoted to a lug 53 on the under side of the frame 1 is a hammer or striker rod 54, the upper end of which projects up through a slot in the frame 1 and has its extremity bent at a right angle and lying in the path of the trip or lug 51. The other end of said rod 54 is provided with a hammer 56.

The numeral 57 designates the bell. As the paper-carriage moves forward and the lug or trip nears the end of the line it will strike the upper end of the hammer or striker rod, depressing the same and elevating the hammer. As the trip slides off of said end the hammer will drop and strike the bell. On the reverse movement of the paper-carriage the trip will yield when it strikes the hammer-rod, so as to pass thereby. The movement of the paper-carriage is limited by the arm 17ª coming in contact with the buffers of the margin-slides.

For the purpose of regulating the line-spacing I provide the following means: Pivoted to a pin 58, secured to lugs 59 at the front of the paper-carriage and in line with the ratchet-wheel 14 at the end of the paper-cylinder, is a lever 60, provided with a coiled spring 61, the tendency of which is to throw the lever backward or outward. Said lever is provided with a rearwardly-extending operating-arm 62. Pivoted to the upper end of said lever is a pawl 63, against which bears the free end of a spring 64, secured to the lever. Pivoted to the front of lever 60 is a plate 65, having a projection 67 at the upper end and at one side and provided with lugs 68 near the upper end, which overlap the sides of said lever and form stops for the plate. The object of this plate is to adjust the lever so as to regulate the line-spacing. When the plate 65 is moved or turned to one side, the pawl will rest on the upper end thereof, so that the pawl when operated by the lever caused by depressing the arm 62 will move the ratchet two teeth or full space and rotate the paper-cylinder correspondingly. To change to half-space, the plate 65 is turned in the opposite direction, so that the pawl will rest upon the projection 67 and be elevated correspondingly. As the pawl is now operated it will move the ratchet one tooth only, thereby turning or rotating the cylinder only half the distance. In rear of said ratchet-wheel is a spring-arm 69, secured to the paper-carriage, provided at the free end with ears 70, to which is secured a roller 71, which engages with the ratchet-wheel and holds it stationary under ordinary conditions, but which will allow the

paper-cylinder to be rotated when sufficient force is applied thereto to overcome the tension of the spring-arm.

Having thus fully described my invention, what I claim is—

1. In a type-writing machine, the combination with the traverse-rail of the paper-carriage, the rail on which it works formed with a T-shaped groove in its front side, and the central arm secured to said traverse-rail formed with a stop near the lower end, of the adjustable T-shaped margin-slides working in said groove, the elastic buffers and the set-screws, substantially as described.

2. In a type-writing machine, the combination with the traverse-rail of the paper-carriage, the rail on which it works formed with a T-shaped groove in its front side and the central arm secured to said traverse-rail formed with a stop near the lower end, of the adjustable margin-slides working in said groove, the elastic buffers formed with diminishing shanks fitting in said slides and the set-screws, substantially as described.

3. In a type-writing machine, the combination with the paper-carriage, the paper-cylinder and the ratchet-wheel secured thereto, of the spring-actuated lever pivotally connected with said paper-carriage and provided with an operating-arm, the spring-actuated pawl and the plate pivoted to said lever having a projection at the upper end and with ears at the sides overlapping said lever, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELMER S. SHIMER.

Witnesses:
W. H. BECK,
C. F. BALLIET.